Small Business Innovation Research/Small Business Tech Transfer

Graphical User Interface for High Energy Multi-Particle Transport, Phase I

Completed Technology Project (2006 - 2006)

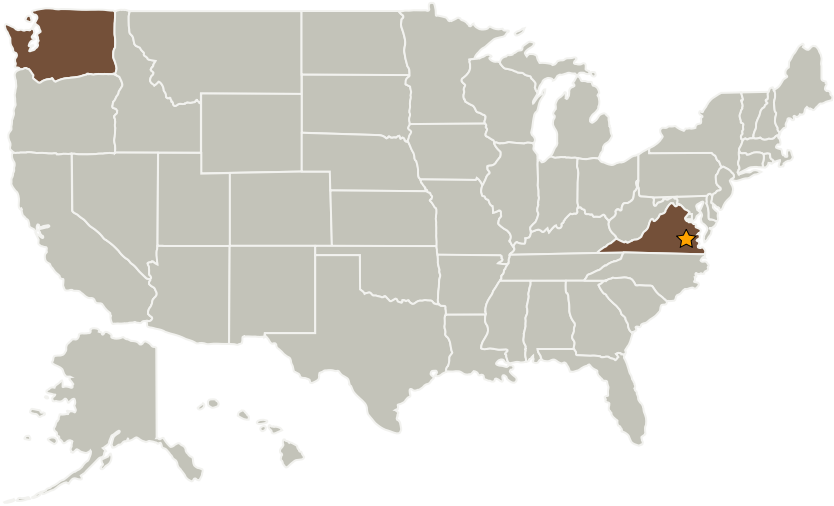
Project Introduction

Computer codes such as MCNPX now have the capability to transport most high energy particle types (34 particle types now supported in MCNPX) with energies extending into the teravolt energy range. The efficient use of these types of Monte Carlo tools is very important for modeling the effects of space radiation on humans, spacecraft and equipment. This proposal would develop a graphical user interface for high energy multi-particle transport. With this innovation, users of the MCNPX code would have access to a powerful graphical user interface for efficient creation and interrogation of their input files, which would significantly reduce the amount of time required to create and debug input files.

Anticipated Benefits

Potential NASA Commercial Applications: MCNPX is available to users around the world; any enhancements to the graphical user interface will make all users of the code more effective in creating their geometries and performing their calculations. Visual Editor Consultants does not sell the Visual Editor; it instead releases this code to the Department of Energy code center (RSICC) to make the code available to interested users. It is believed that this provides the maximum benefit to the user community and enhances the international reputation of both Visual Editor Consultants and Carter Monte Carlo Analysis, Inc. Outside NASA, this will benefit the fusion research, accelerator research and general high energy physics research.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Langley Research Center (LaRC)

Responsible Program:

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Organizations Performing Work	Role	Type	Location
★Langley Research Center(LaRC)	Lead Organization	NASA Center	Hampton, Virginia
Visual Editor Consultants	Supporting Organization	Industry	Richland, Washington

Primary U.S. Work Locations	
Virginia	Washington

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Randolph Schwarz

Technology Areas

Primary:

- TX03 Aerospace Power and Energy Storage
  - TX03.2 Energy Storage
    - TX03.2.1 Electrochemical: Batteries